ROŞIA MONTANĂ, ROMANIA: FROM MUSEUM SAMPLES TO THE IMPLICATIONS OF A NEW "GOLD RUSH"

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Since prehistoric times, gold has been a mineral with a special status, influencing the complex development of certain areas of the world. In Europe, the most famous gold area was traditionally considered the Golden Quadrilateral in the Western Carpathians, with the mining center at Roşia Montană (RM). RM is located in the NErn part of the Metalliferous Mountains, in the neighborhood of the towns Abrud and Câmpeni. The long lasting mining activity in the region resulted, among others, in famous museum samples that can be found today in several Romanian museums, as well as in most of the important mineralogical collections all around the world. The paper starts with a brief overview and evaluation of the gold collection at the Mineralogical Museum of the Department of Mineralogy, Babeş-Bolyai University in Cluj-Napoca (MMBBU) mainly focusing on the samples from RM. Then a historical presentation of the mining activity in the area follows, including the current status of the gold mining project.

In Romania, The Gold Museum from Brad owns the most representative collection, with specimens especially originating from the local mines; MMBBU hosts the second most valuable collection in the country. The gold collection consists at present of about 500 samples from Romania and from abroad. Among them 31 % are from Roşia Montană, 41 % from about 20 other localities in the Western Carpathians, 6 % from other Romanian occurrences, 9 % from abroad and 13 % have an unknown occurrence. Accordingly, it can be said that the RM samples represent the core of the collection. Museum gold samples are considered to have an intrinsic high value due to their content of precious metal, as well as to the interest they present for the public. Still, there are mineralogical and museological criteria that can be used when evaluating such individual samples or collections, among which: form of crystallization, mineral assemblage, genesis, status of the occurrence (closed mines etc.). These criteria were applied for evaluating the RM samples in our collection.

Besides its fame and richness in gold, another fact that makes RM unique is the long history of the mining activity. Proofs of alluvial gold panning as well as surface and underground mining by Geto-Dacians were revealed by historians. The best-preserved antique mining works go back to the Roman times (106-273 a. D.). Between 1786-1855 50 "waxed plates" dating from the period 131-167 a. D. were identified in the region; one of them (plate no. XVIII, from the 6th of February, 131 a. D.) contained the name of RM in that times (Alburnus Maior). Prior to the XVIIIth century mining was a private business, then in parallel it became partly state-owned. A huge network of surface and underground works was created. Several successive state-owned companies were operating in RM starting with 1948; in 1970 the largest open cast mine for gold in Romania was opened here.

The actual economic politics promoted by the Romanian government (The Mining Law, 1998) encouraged privatization in the field on mining. The mining area RM was conceded by the Canadian company Gabriel Resources Ltd., and lately the mixed Romanian-Canadian company Roşia Montană Gold Corporation S.A. (RMGC) was given the exploitation license. The current mining project concerns the exploration, large-scale surface mining, and processing of the gold-silver ores from several perimeters (Cetate, Cârnic, Orlea, and Jig) in RM area.

According to the data presented by RMGC a total reserve of 225,740,000 tons of ore was estimated, with an average metal content of 1.7 g/t gold and 9.1 g/t silver. The mining activities are planned to start in 2005 and based on the estimated reserves, the duration of the exploitation would be of 17 years. The Au-Ag ore from the opencast mines would be crushed and milled by using conventional methods, and then processed with open cyanide ("carbon-in-leach" type). RMGC planned to build a cyanide destroyer unit, where the concentration would be reduced to 1 ppm prior to the storage of the waste into the tailing pond that would be located on the present-day location of Corna village.

The current mining project was the target of an intense public debate. Representatives of various local NGOs, and of internationally recognized official bodies evidenced the implications that could arise from the implementation of the project. Among them, long-term social and environmental impacts, such as the resettlement and relocation of 1800 people (affecting 38 % of the RM commune surface), possible failure of structures and dams leading to cyanide leaking into the soil, ground water, river and air pollution not only with cyanide but also with other metals (As, Pb, U, Hg, Fe, Ni, Cd, etc.)

The impressive cultural heritage values concentrated here give an additional weight to the final process of decision-making. Archaeologists and historians from all around the world underlined the importance of the conservation of this archaeological site that could be declared as "archaeological park of an European interest".